

Insights into Antibody Only Tests on the COVID-19 in Virginia: Testing Dashboard November 23, 2020

The Virginia Department of Health (VDH) has added COVID-19 antibody testing encounters and percent positivity (7-day moving average) to the COVID-19 Testing dashboard:
(<https://www.vdh.virginia.gov/coronavirus/coronavirus/covid-19-in-virginia-testing/>).

The antibody testing data on the dashboard must be interpreted carefully. The percent positivity on the dashboard cannot be used as the measure of COVID-19 immunity in the population of Virginia.

The percent positivity displayed on the dashboard is influenced by high antibody positivity among persons with known COVID-19 infections (confirmed or probable cases). This is likely due to increased ordering of antibody testing on individuals who have tested positive or have been ill with COVID-like illness.

As an example, the table displays the antibody test reports for October 2020. The percent antibody positivity for cases (confirmed and probable) was 91%, while they only accounted for ~6% of test reports (5.4% known confirmed cases + 0.5% known probable cases). Antibody positivity also varied by laboratory. The antibody positivity was lower for reports from LabCorp and Quest Diagnostics, which are more likely to serve outpatient populations. The “other laboratories” category included 53 facilities: the majority of tests were from hospital-based laboratories, while the majority of the laboratories reported fewer than 5 tests.

Table. Antibody test results reported to VDH by case status and laboratory in October 2020

	Number tested	Proportion of all tests	Antibody positive	Antibody positivity rate
All tests	13,424	100%	1,602	11.9%
Known confirmed cases	719	5.4%	654	91.0%
Known probable cases	61	0.5%	55	90.2%
Not identified as a case	12,644	94.2%	893	7.1%
Test conducted by LabCorp or Quest Diagnostics	11,096	82.7%	1,252	11.3%
Test conducted by other laboratories	2,328	17.3%	350	15.0%
Not identified as a case AND test conducted by LabCorp or Quest Diagnostics	10,504	78.2%	706	6.7%

Alternative assessment of antibody positivity

To assess antibody positivity in Virginia's population using reported antibody test results, VDH has limited analyses of antibody tests for individuals who were not confirmed or probable COVID-19 cases and to tests conducted by LabCorp or Quest Diagnostics.

- In October, 6.7% of antibody tests statewide were positive among individuals who were not confirmed or probable COVID-19 cases and whose tests were conducted by LabCorp or Quest.

- As of October 15, 1.9% of Virginia's population had been classified as a COVID-19 case.
- **Combined, an estimated 8.6% of Virginia's population has evidence of a past COVID-19 infection as of October 2020.**

Even this antibody positivity estimate needs to be interpreted with caution because of the selective nature of who gets antibody testing. Individuals tested for COVID-19 antibodies are not a random sample of the Virginia population. The data submitted by laboratories do not include the reason for testing. Individuals, their clinicians, and/or their workplaces may seek or request antibody testing for various reasons. Individuals without a diagnosis of laboratory-confirmed COVID-19 infection but with risk factors for COVID-19 (e.g., history of a compatible illness, history of exposure to a known case, travel history, occupational exposure) likely are tested for COVID-19 antibodies more readily than the general population. Any estimates of the cumulative incidence of COVID-19 infection based on routine antibody lab reports likely represent upper boundaries on the true cumulative incidence. In addition, testing for antibodies has consistently been disproportionately greater in Virginia's Northern region, which limits the generalizability of any single estimate to the entire state.

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